

SECTION 07 32 13

CLAY ROOF TILES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Clay roof tiles.
- B. Underlayment, including ice dam protection.
- C. Wood attachment members (battens, nailers, etc.).
- D. Fasteners and accessories.

1.02 RELATED REQUIREMENTS

- A. Section 06 10 00 - Rough Carpentry: Material requirements for attachment members (battens, nailers, etc.).
- B. Section 07 62 00 - Sheet Metal Flashings and Trim: Roof flashing.

1.03 REFERENCE STANDARDS

- A. ASTM C 91 - Standard Specification for Masonry Cement; 2005.
- B. ASTM C 144 - Standard Specification for Aggregate for Masonry Mortar; 2004.
- C. ASTM C 270 - Standard Specification for Mortar for Unit Masonry; 2007a.
- D. ASTM C 1167 - Standard Specification for Clay Roof Tiles; 2003.
- E. ASTM D 1970 - Standard Specification for Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection; 2001.
- F. NRCA MS104 - The NRCA Steep Roofing Manual; National Roofing Contractors Association; 2001, Fifth Edition, with interim updates.

1.04 SUBMITTALS

- A. See Section 01 30 00 - Administrative Requirements, for submittal procedures.
- B. Product Data: Manufacturer's data sheets on tile and underlayment, indicating material characteristics, installation instructions, and limitations and precautions.
- C. Shop Drawings: For metal flashings and counterflashings, indicate overall configurations and thicknesses, details at complex intersections, jointing methods and locations, and fastening details.
- D. Verification Samples: Set of tiles representing actual product in color, finish, and style, including special shapes and fittings.
- E. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
 - 1. See Section 01 60 00 - Product Requirements, for additional provisions.
 - 2. Extra Roof Tiles: Quantity equal to 5 percent of total installed, including appropriate quantities for each color, size, and shape.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Deliver and store materials in manufacturer's unopened packaging, with labels intact, until ready for installation.

1.06 WARRANTY

- A. See Section 01 78 00 - Closeout Submittals, for additional warranty requirements.
- B. Correct defective Work within a 5 year period after Date of Substantial Completion.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Clay Roofing Tiles:
 - 1. Design is based on _____ tiles manufactured by _____.
 - 2. Acceptable manufacturers:
 - a. Ludowici Roof Tile: www.ludowici.com.

2.02 ROOF TILES

- A. Existing Clay Roof Tiles: Salvage and reuse intact and serviceable existing clay tiles wherever possible. Provide new tiles as listed below to match existing when insufficient quantities of existing tiles are unavailable to meet the color blend match.
- B. Clay Roof Tiles:
 - 1. Match existing tile as closely as possible.
 - 2. Comply with requirements for ASTM C 1167, Grade 1 tile; with nail holes made before firing.
 - 3. Profile: to match existing.
 - 4. Tile Size: As selected from manufacturer's standards.
 - 5. Color: Provide tile colors in the following blend percentages: 70% Summer Rose, 10% Santiago Rose, 10% Clay Red, 5% desert Sand, 5% Beach Brown. Eave closures and ridge closures : Clay Red.

2.03 SHEET MATERIALS

- A. Underlayment: Self-adhering polymer-modified butyl rubber sheet complying with ASTM D 1970; minimum thickness of 40 mils; with strippable release paper and slip-resistant embossed polyethylene sheet top surface.
 - 1. Provide Grace Ultra manufactured by _Grace Construction Products.

2.04 METAL FLASHING MATERIALS

- A. Provide metal roof flashing as specified in Section 07 62 00.

2.05 FASTENERS

- A. Tile Fasteners: Stainless steel ring shank nails, 10 gage thick, with minimum 3/8 inch diameter head, of sufficient length to penetrate 3/4 inch into solid substrate or completely through plywood sheathing.

2.06 ACCESSORIES

- A. Attachment Members:
 - 1. Material: Wood; pressure preservative treated.
 - 2. Sizes and Spacings: To match existing.

3. Nailers: Nominal 2 inch thick members, height as required for specific conditions.
- B. Mortar:
 1. Cement: ASTM C 91, Type M.
 2. Sand: ASTM C 144, uniformly graded and free from organic materials.
 3. Mix: Premixed or site mixed, ASTM C 270 for Type M mortar.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Examine structural roof deck for compliance with specified requirements. Verify that roof penetrations and roof openings are correctly installed in proper locations.
- B. Do not begin installation of tile roofing until substrates have been properly prepared. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.02 PREPARATION

- A. Prepare roof deck surfaces using methods recommended by tile manufacturer for achieving best results under project conditions.
- B. Seal roof deck joints wider than 1/16 inch with deck tape.

3.03 INSTALLATION

- A. Install clay tile roofing system in accordance with recommendations of tile manufacturer and in accordance with recommendations of NRCA Steep Roofing Manual (MS104).
- B. Underlayment:
 1. Roof Slopes Below 4/12: Install one layer of elastomeric membrane underlayment over entire roof area, perpendicular to roof slope, with ends and edges weather lapped a minimum of 6 inches. Stagger end laps of each layer.
- C. Attachment Members:
 1. Nailers: Install nailers at ridge and hips, directly over underlayment. Protect with additional layer of underlayment before installing ridge and hip tiles and accessories.
- D. Clay Tile:
 1. Lay tile square with building lines and parallel with roof slope. Install filler, closure, and mitered pieces as required. Install tiles to match existing installation system.
 2. Nail tiles by driving nails to point where nail heads just clear surface of tile, so tiles hang on nails. Do not overdrive nails, putting pressure on underlying tile, and do not underdrive nails, putting strain on overlying tile.
 3. At valleys and other areas with metal flashing, use wire ties for tile support as required to avoid nailing in vulnerable areas.
 4. Cut and fit tiles neatly around vents, pipes, and other projections.
 5. Set ridge and hip tile in full bed of mortar. Strike flush with face of tile.

6. Install accessories in accordance with manufacturer's details and recommendations.

3.04 PROTECTION

- A. Minimize traffic over finished roof surface. Where walking on roof is absolutely necessary, wear soft-soled shoes and walk on butt of tiles to avoid breakage.
- B. Remove and replace damaged or broken tile before Date of Substantial Completion.

END OF SECTION